

February 15, 2006

**TO THE MEMBERS OF THE BROWN  
COUNTY BOARD OF SUPERVISORS**

Ladies and Gentlemen:

The LAND CONSERVATION SUB COMMITTEE met in regular session on January 25, 2006, and recommends the following motions.

**Land Conservation Subcommittee**

1. Soil Solutions Meeting February 8, 2006. No action.
1. Director's Report. No action.

Approved by:

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COUNTY EXECUTIVE

Date

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**PROCEEDINGS OF THE BROWN COUNTY**  
**LAND CONSERVATION SUBCOMMITTEE**

Pursuant to Section 19.94 Wis. Stats., a regular meeting of the **Brown County Land Conservation Subcommittee** was held on Wednesday, January 25, 2006 at Austin Straubel International Airport, 2077 Airport Drive, Green Bay, Wisconsin

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**Present:** Norb Dantinne, Bernie Erickson, Mike Fleck, Jack Krueger, Mary Scray

**Excused:** Merlin VandenPlas.

**Also Present:** Supervisor Harold Kaye, Bill Hafs, Brad Holtz, Bill Bosiacki, Tom Miller

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1. **Call Meeting to Order:**

The meeting was called to order by Chairman Dantinne at 6:00 p.m.

2. **Approve/Modify Agenda:**

**Motion made by Supervisor Krueger and seconded by Supervisor Scray to approve. Vote Taken. MOTION APPROVED UNANIMOUSLY.**

3. **Approve/Modify Minutes of Land Conservation Subcommittee of December 28, 2005.**

**Motion made by Supervisor Erickson and seconded by Supervisor Fleck To approve. Vote Taken. MOTION APPROVED UNANIMOUSLY.**

4. **Soil Solutions Meeting February 8, 2006.**

Technician Brad Holtz distributed a handout (see attached) and said that this is a follow-up to a project that they have been working on for the past two years called the Brown County Regional Compost Initiative. He reported that last fall, RFP's were sent out to three vendors for their ideas to construct, own and operate a regional compost facility in Brown County. He said they received one formal proposal from Soil Solutions and they are working with them to move the project forward. Holtz reported on the stakeholders that are involved in this and said that Soil Solutions plans to meet with the shareholder group of the regional compost facility on February 8<sup>th</sup> at 9:30 a.m. at the Ag & Extension Center. At this meeting, they will lay out their vision for the facility and will look for support from the general community. Holtz invited the committee members to attend the meeting.

5. **Director's Report.**

County Conservationist Bill Hafs distributed two handouts (see attached). He directed the committee to page three of the first handout and explained that the Chicago Climate Exchange (CCX) is purchasing carbon credits and it appears that two area farms will be eligible for those credits. He explained the trading process and said he thought the committee would be interested in the information provided. The other handout pertains to the Wisconsin Manure

Management Task Force and Hafs and the committee members had a brief discussion on that.

6. **Such Other Matters as Authorized by Law.**

**Motion made by Supervisor Krueger and seconded by Supervisor Erickson to adjourn at 6:07 p.m. Vote Taken. MOTION APPROVED UNANIMOUSLY.**

Respectfully submitted,

Jeanne Buzzell  
Recording Secretary

## **Request for Meeting**

### **1.0 INTRODUCTION**

Soil Solutions Inc. and Fox Contractor Corporation (Soil Solutions) submitted a proposal in response to the Requests for Proposal dated June 28, 2005. Our approach to the project outlined several processes to compost a variety of organic feedstocks, including dewatered manure, industrial by-products and municipal biosolids. We projected the ability to be able to take all of these materials when the facility opens and to incrementally increase volume and feedstock variety over time. We believe this plan provides a sound and economical solution to the handling of organic waste streams in Brown County. This plan will allow the distribution of nutrients over a wider land-base, reduce the risk of environmental pollution and provide users with products that will enhance plant growth. Brown County and the Fox River Valley are ripe for such a facility, both from the perspective of having alternative solutions for these by-products, to the evident and expanding use of compost and compost-based products in the marketplace. We believe our proposal and plans are sound, and if instituted will be successful.

The tipping fees proposed are slightly higher than current costs for utilization or disposal of selected organic materials. A solution for the higher cost would be to seek State and Federal Grants and low interest loans for the land purchase, facility design and construction. We are willing to start looking for alternative funding sources for this project but need to have the support of the stakeholders, public officials and interested parties on the local, state and federal levels. We have proposed a meeting of all interested parties to discuss the current thought process and provide direction.

### **2.0 TECHNICAL APPROACH**

Our technical approach for this project is based on implementing two composting methods. The first is a more economical windrow system for dewatered dairy manure. The second is an in-vessel, agitated bed technology system. We believe this technology is the best solution for the conditions and feedstocks present in Brown County.

The agitated bed composting technology has been in use for more than 20 years worldwide and its success is well documented. Transform Compost has refined the process by producing a lower cost alternative that reduces both capital cost and operational costs, yet produces the same high quality compost expected from the agitated bay technology. The compost produced with this system is computer controlled and will meet all requirements for time and temperature required by US EPA 40 CFR Part 503 standards. As an added benefit, multiple composting bays allow us the flexibility to have some bays produce manure-only compost along side of bays that are composting packing house waste and biosolids. This flexibility will allow us to easily respond to customers needs.

### **3.0 VALUE-ADDED POTENTIALS**

Soil Solutions Co has invested a significant time and resources to formulate this request for proposal. As a result, we believe there are efficiencies that can be achieved if we can look at this under a number of different scenarios. The following are examples of efficiencies:

- Pilot study to determine best composting technology.
- Ownership of property and facility.
- Siting alternatives
- Researching and writing grants.
- Alternative collection and transportation pricing.

We feel by communicating our ideas to the stakeholders, the best blend of options may be developed to suit the specific needs of each individual entity.

### **4.0 SUMMARY**

We look forward to meeting with the Brown County Development Team and all interested parties to develop a partnership agreement that is beneficial to everyone involved. We believe that a facility can be built with public and private funds that can both help protect our environment and enhance business in the region. We anticipate that this facility will grow over time as markets are developed and efficiencies are obtained in the marketplace. We are requesting that all interested parties provide input for the development of a regional facility. We look forward to becoming a partner of the Brown County and Fox River Valley communities.

# Temperatures Rising

It's now agreed that the climate is warming. Why should you care and what can you do? **BY JEANNE BERNICK**

**G**ene Takle is not easily awakened from sleep in the middle of the night—except when it storms. The cracks of thunder and flashes of lightening don't frighten him; they give him peace. It means that Iowa's weather patterns are holding.

As global temperatures continue to rise, those midnight storms unique to the Midwest will only be memories in 35 years, says Takle, an Iowa State University climatologist with the Regional Climate Modeling Laboratory. His research predicts global warming will diminish nighttime summer showers that drench corn and soybean fields. Two weeks between rains instead of one will be significant for crops.

"Global warming is bringing a whole new climate to the farm," Takle says. The climate change he refers to may not necessarily be warmer, as the term global warming suggests. Your farm may actually *become* colder, wetter weather, depending on where you live.

There was, in the 1990s, considerable debate among scientists and policymakers about whether global warming was real and exactly how human activity contributed to it. Not anymore.

Most scientists agree that it's real, and it's human activity that discharges carbon dioxide (CO<sub>2</sub>) and other greenhouse gases into the air—or at least they're partly to blame. A strong minority of scientists believe climate warming is due to nature's own cycle, not human activity. Both sides of the debate agree there is no crisis—yet.

Farmers naturally shy away from anything related to global warming—it's scary, it screams extremism and it ignores the human ability to adapt. After all, who invented the umbrella?

But here's why you should care: Climate changes affect every aspect of how you farm and what you produce. Certain practices on your farm could even help slow the warming trend.

**How's the weather?** Scientists postulate a wide range of possible impacts on agriculture from global warming, including benefits like increases in soybean yields due to the phenomena called CO<sub>2</sub> fertilization.

Here's what they agree on: Global annual average temperatures rose an average of 1°F during the last century. This may seem insignificant, but with

atmospheric CO<sub>2</sub> expected to double by the year 2100, the National Research Council predicts temperatures in most areas will jump another 4° to 7°—the same amount that has occurred in the Arctic during the past 50 years.

While scientists are in agreement on this front, they are anything but agreeable over exactly what impact this change will have on major crop producing regions.

In the least, a 5° temperature rise during the next 30 to 50 years lays the groundwork for increased weather volatility for all farmers, says Michelle Wander, University of Illinois soil fertility specialist. Wander drafted the agricultural portion of the recent Union of Concerned Scientists 2005 publication on climate change in the Great Lakes Region.

"By 2030, Illinois summers may resemble those of Oklahoma or Arkansas in terms of average temperature and rainfall," Wander says. This means more intense spring and fall rains and more frequent occurrences of heat extremes.

By the end of the century, however, the Illinois summer climate will generally resemble that of current east Texas,



PHOTO: ANDREW BUNCHETT

she adds. "Temperatures will limit the productivity of our major grains."

But Takle has a different take on higher temperatures. His climate modeling indicates a 21% increase in rainfall in the Upper Mississippi region by 2040, an 18% increase in snowfall and a 51% increase in surface water runoff. Precipitation will come in heavy rainfall events marked with longer dry periods between rains. Increased rainfall could favor crop growth in western Iowa, Nebraska and northern Canada.

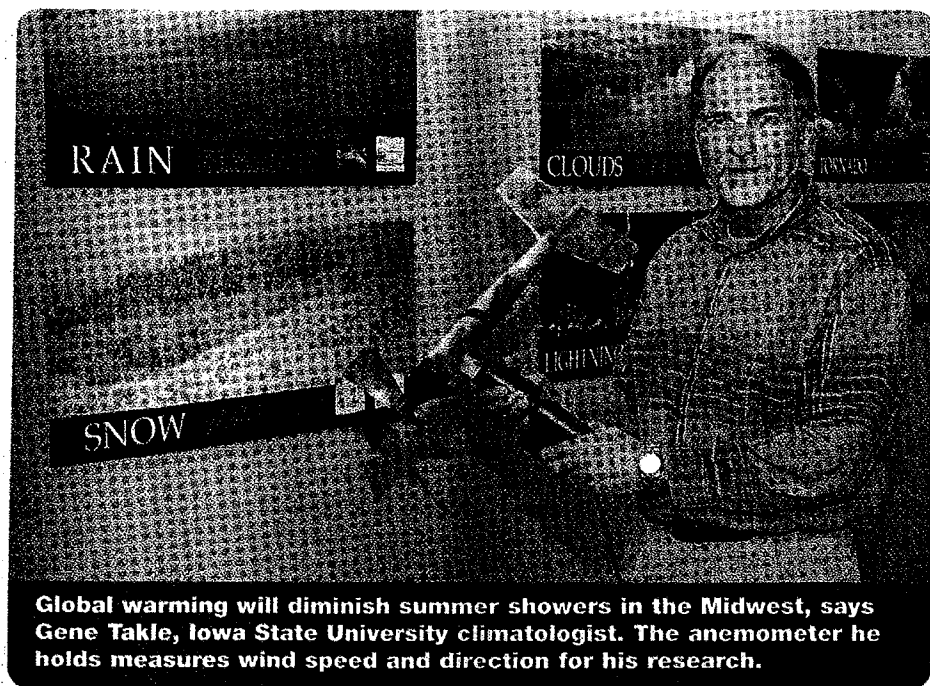
Changes in climate already produce longer growing seasons and heavier rainfall in the Midwest. Iowa now averages about eight more days between the last frost of spring and the first fall frost than 50 years ago, he says.

The wide disparity makes projecting specific impacts on agriculture difficult for scientists. For example, while Corn Belt farmers can expect more weather volatility in the future, Takle's climate modeling suggests summertime daily maximum temperatures will not climb as high in a Midwestern region centered on eastern Kansas as elsewhere in the U.S. (see map on page 18).

**More pests and disease.** This warming "hole" stretches for hundreds of miles and includes Missouri, Iowa, Nebraska and Oklahoma, according to research by the Regional Climate Modeling Laboratory. The findings underscore the need to further research the impact of global warming on a region-by-region basis, Takle says.

Climate change is already behind increased large-scale epidemics of new and old crop diseases, scientists say.

Plant pathology literature connects pandemics of pests with extreme weather events, says X. B. Yang, Iowa State University plant pathologist. He



**Global warming will diminish summer showers in the Midwest, says Gene Takle, Iowa State University climatologist. The anemometer he holds measures wind speed and direction for his research.**

nods to the pandemics of wheat stripe rust in the Great Plains in 2001 and 2003. In 2002, U.S. soybean farmers experienced epidemics of soybean sudden death syndrome and viral diseases.

Mass outbreaks of Asian soybean aphids occurred in 2003 in Iowa, Illinois and Minnesota after cool July weather suddenly turned into a record dry August. "Before the mid-'80s, no more than four major diseases affected soybean production," Yang says. Now the number has more than doubled, with annual losses totaling almost \$2 billion.

Warmer winters in northern production regions allow pests—and insect-borne viral diseases associated with them—to survive. For example, the European corn borer, the No. 1 pest affecting corn yields, increased the number of generations in the Corn Belt each season from one to two.

Policymakers and scientists continue to point fingers at agriculture for greenhouse gas emissions. Agricultural activities are responsible for as much as 7% of total U.S. heat-trapping emissions, according to the Environmental Protection Agency.

"Farmers often ask what they should be doing about global warming, but there are no easy answers," says William Easterling, agronomist and director of the Institutes of the Environment at Penn State University.

**No-regrets approach.** Given the uncertainties of how climate may change in each region, Easterling suggests a no-regrets approach—do things that will help reduce the impact of climate change and also make sense whether there is a climate change or not.

One of his win-win suggestions is to plant shelterbelts wherever possible. Studies show that shelterbelts increase crop yields and help offset the losses that drought and other weather cause to crop productivity. Economic analysis shows the costs of installing shelterbelts are returned within a few years by additional revenues from increased crop productivity.

According to Wander, simply using biodiesel and ethanol in place of fossil energy on the farm helps overall reduction of emissions. Certain best practices in soil management, such as no-till, reduced tillage and cover crops enhances short-term soil carbon storage.

"Effectively managed soils could abate an estimated 10% of heat-trapping emissions produced in the U.S. over the next 30 to 50 years," Wander says.

Carbon sequestration (removal of CO<sub>2</sub> from the atmosphere and storing carbon in the soil) is gaining momen-

#### Global Warming on the Web

Intergovernmental Panel on Climate Change:  
[www.ipcc.ch](http://www.ipcc.ch)

NASA's Goddard Institute for Space Studies:  
[www.giss.nasa.gov/research/modeling](http://www.giss.nasa.gov/research/modeling)

Consortium for Agricultural Soil Mitigation of Greenhouse Gases: [www.casmgc.colostate.edu](http://www.casmgc.colostate.edu)

Chicago Climate Exchange: [www.chicagoclimatex.com](http://www.chicagoclimatex.com)

Purdue Climate Change Research Center:  
[www.purdue.edu/climate](http://www.purdue.edu/climate)

tum as the most crucial action farmers can take to help curb carbon emissions.

**Harness the market.** In fact, the potential for U.S. agricultural soils to sequester CO<sub>2</sub> using existing technologies is about 15% of carbon emissions in the U.S., reports the Consortium for Agricultural Soil Mitigation of Greenhouse Gases (CASMGs).

The potential market for carbon credit trading, in which a company that produces an extreme amount of carbon pays a farmer to sequester carbon in the soil, is \$1 billion to \$5 billion during the next 30 to 40 years, CASMGs reports. "Many economists believe the most efficient way to achieve the goal of reducing greenhouse gases is with a free-market carbon trading program," says Chuck Rice, CASMGs director

and professor of agronomy at Kansas State University.

About 75 producers representing nearly 75,000 acres in Kansas have enrolled in a pilot program from the Chicago Climate Exchange (CCX) to keep land in no-till or new grass plantings for four years. Producers pool carbon credits from their land and offer those credits for bid on CCX.

When credits are purchased, a record of the carbon financial transaction resides in the CCX registry. Credits purchased by businesses can be used that year or banked. Bid prices indicate producers will eventually receive about \$1 per acre for the four-year period of the pilot project (2003 to 2006).

In Iowa, more than 83,000 acres are enrolled in Iowa Farm Bureau's program, which aggregates carbon credits

for sale on CCX. Each acre of land that is not tilled pulls a half-ton of CO<sub>2</sub> from the air per year, reports Dave Miller, manager of the Iowa Farm Bureau's carbon program.

Iowa farmers could potentially remove millions of tons of CO<sub>2</sub> from the air annually by increasing conservation tillage. In April 2005, the University of Iowa purchased 2,000 tons of carbon credits to offset power plant operations. The sale represents CO<sub>2</sub> sequestration from 4,000 acres of Iowa farmland.

Monetarily, Rice says the incentive is not high enough yet for farmers to change production practices just for the carbon markets. The European carbon trading market, which is under the Kyoto Protocol, is 10 to 15 times higher than the U.S. market. "This shows the potential for farmers to

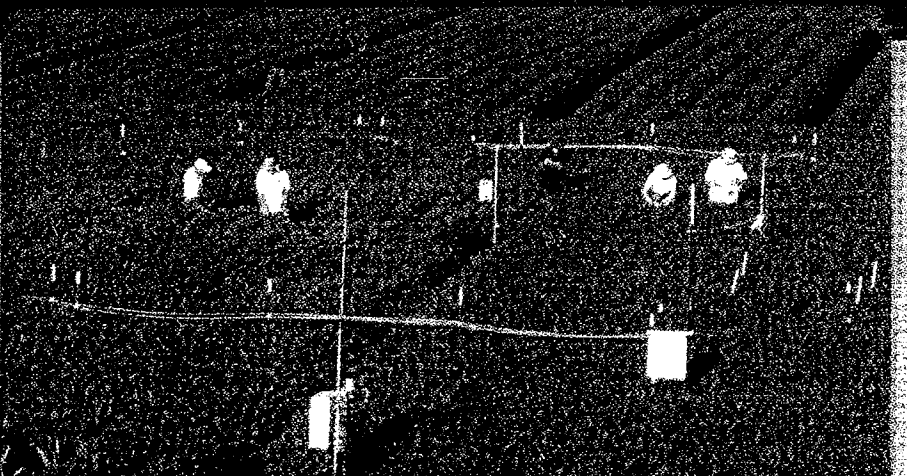
## FACE the Future

If United Nations predictions hold true, our future atmosphere is on track to contain 50% more carbon dioxide (CO<sub>2</sub>) than in 1800. That could be good for crops like soybeans, which respond to CO<sub>2</sub> as a natural fertilizer. But studies show the pollutant ozone is also on the rise. Ozone causes lower yields.

Learning how crops respond to elevated CO<sub>2</sub> and ozone levels is the aim of SoyFACE, a project led by University of Illinois plant biologist Stephen Long. SoyFACE uses technology called Free Air Concentration Enrichment (FACE), which consists of rings of pipes about 70' in diameter that release CO<sub>2</sub> or ozone into the wind as it flows across the crop.

While rising temperature and altered rainfall are expected to depress crop yields in the second half of the century, some theories suggest rising CO<sub>2</sub> could compensate. Results of the FACE experiments show that will not be the case. "When we and others do an elevated carbon dioxide treatment on corn, rice, wheat and soybeans in the open air, the yield improvement is only 50% of that found in greenhouse studies," Long says.

If the effect of ozone is also added, significant yield depression should be expected, he adds. Research exposing soybeans to higher ozone levels shows yields will drop



**Free Air Concentration Enrichment (FACE) technology consists of rings of pipes that release carbon dioxide or ozone across the crop.**

20% by the year 2050, simply based on the current rate of rising surface ozone levels—1% to 2% a year.

Germplasm screening of 22 varieties shows some soybean varieties are more sensitive to ozone than others. The most sensitive yielded more than 30% less under elevated ozone concentration. The average yield reduction was 19%. However, a few varieties were quite tolerant of the elevated ozone, with yield reductions of approximately 5%.

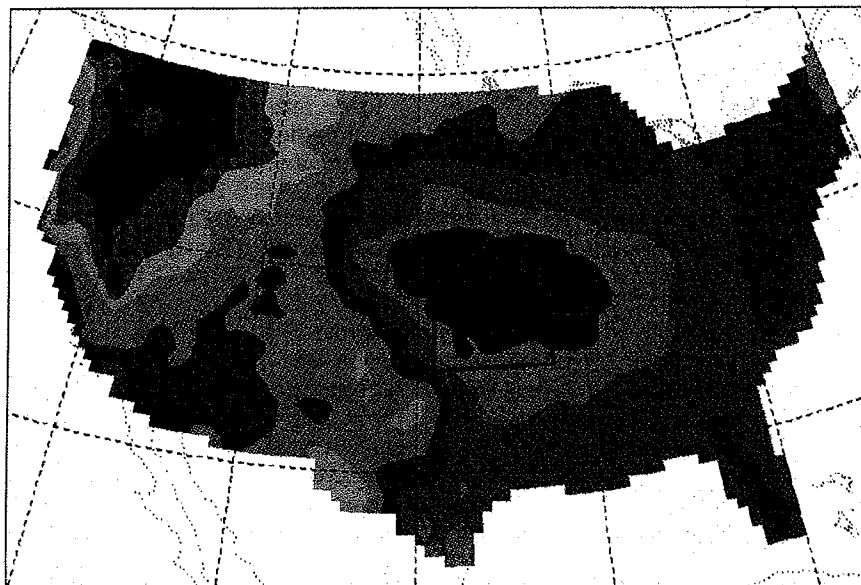
Surface ozone levels are only increasing in industrial countries in the Northern Hemisphere, which means rising ozone levels on soybeans has relevance long term for U.S. corn production with Brazil, Long explains.

SoyFACE researchers are now using the facility to screen for ozone-resistant soybeans and to test chemicals that may provide protection.

**Beetle battle.** SoyFACE research shows another downside to rising CO<sub>2</sub> levels—Japanese beetles love the gas. Japanese beetles do considerably more damage to the plant under higher CO<sub>2</sub> levels, Long says. "We know it is the change in the plant because if we take two soybean leaves, one grown in our current CO<sub>2</sub> and one grown in the future CO<sub>2</sub>, the beetles always go for the leaf grown in elevated CO<sub>2</sub>."

Visit [www.soyface.uiuc.edu](http://www.soyface.uiuc.edu) for more information.

SOURCE: REGIONAL CLIMATE MODELING LABORATORY, IOWA STATE UNIVERSITY.



-30.2 -31.1 32 32.9 33.8 34.7 35.6 36.5 37.4 38.3 39.2 40.1 41 41.9 42.8

Global warming doesn't necessarily mean your weather is getting hotter. Climate modeling suggests summertime daily maximum temperatures won't climb as high in the Midwest as elsewhere in the U.S. This map shows the estimated change in summer temperatures from the 1990s to 2040. Red areas will warm by 42.8°F; blue areas by 35.6°F or less.

claim \$10 to \$15 per acre for carbon credits in the future," Rice says.

Strong believers in global warming say there should be a mandatory cap on carbon and other greenhouse gases, forcing free market carbon trading to kick in. Several senators have called for a mandatory cap. The Bush administration supports research and voluntary initiatives but no mandatory caps or multination pact.

**To cap or not to cap?** Agricultural industry groups oppose cap-and-trade schemes that require a mandatory cap on carbon, even if it means paying farmers to store it in soil.

The energy alternative to meet a cap on carbon is natural gas, so farmers would pay more for natural gas-related items that go into the crop production, such as nitrogen-based fertilizer and irrigation, says Paul Schlegel, director of public policy, American Farm Bureau. "Right now, when you have \$500/ton fertilizer, that far outweighs the hope of having a market where farmers might be able to make \$5 to \$10 per ton by sequestering carbon." **F**

Posted January 20, 2006

## **Group fails to agree on manure regulations**

**By Ed Byrne**

*Gannett Wisconsin Newspapers*

MADISON — After seven months of meeting, study and deliberation the Wisconsin Manure Management Task Force could not reach agreement on whether tighter regulation and stiffer penalties are needed to protect ground and surface water from contamination because of poor handling of manure.

As a result, at its final meeting on Thursday, the 16-member task force voted to stick with the recommendations in its working draft report, which stress education and voluntary compliance with good practices. It did add minor recommendations that task force members continue to be active in trying to solve manure problems, and calling on the state to issue a status report on manure management annually for the next three years.

The vote was 13-1 in favor of the final report, with the only negative vote coming from Andrew Hansen, an attorney with Midwest Environmental Advocates. One task force member abstained and another was absent.

The top recommendation from the task force is designed to reduce the number of runoff incidents by the use of good practices. They include not spreading manure on high-risk fields in the winter, training manure haulers on safe practices and developing emergency response plans to effectively deal with spills.

The task force kept language short of calling for mandated programs, but said "the specific mechanisms for implementing these practices may include education, incentives, planning and regulation." The final report from the task force goes to the secretaries of the Department of Natural Resources and the Department of Agriculture, Trade and Consumer Protection.

### **New program recommended**

Richard Gorder of the Wisconsin Farm Bureau Federation Board surprised the task force with a recommendation that the state's Farmland Preservation Program be replaced with a nutrient management program. This would provide funding for farmers to develop individual nutrient management plans for their operations. His plan would take funding for the Farmland Preservation Program, estimated at \$13 million to \$15 million this year, and redirect it to nutrient management planning. "Since use value assessment, the Farmland Preservation Program is not meeting expectations," Gorder said. No vote was taken on the idea, but it seemed to be well received.

Brown County farmer Dan Brick said the most pressing need is educating farmers on the problems caused by manure spills and the safe practices to prevent them.

"I think education would deter a lot of these accidents from ever happening in the first place," Brick said. 'We have made some strides' Some counties send farmers maps showing where

topography is good and bad for the application of liquid manure to fields, but many other counties do not.

"We said that farmers should use winter spreading plans, and we also said the state needs to come up with a way to have nutrient management plans in some key areas, and how to fund that," Manitowoc County Executive Dan Fischer said. "We have made some strides."

Hansen disagreed.

"If we go to (farmers) with a voluntary approach, we are just going to get more of the same," Hansen said. "We have a serious credibility problem if we come out of here and not recommend that something be required."

— Ed Byrne is editor of the Wrightstown Post-Gazette.